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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/730,458	12/08/2003	Andreas Detmers	600.1292	2916

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EXAMINER	
PHAM, HAI CHI	

ART UNIT	PAPER NUMBER
2861	

DATE MAILED: 12/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/730,458	DETMERS, ANDREAS	
	Examiner	Art Unit	
	Hai C. Pham	2861	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-12 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-12 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 08 December 2003 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date 12/08/03.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

3. Claims 9 and 10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 9:

- The following limitation "the laser power on the measure" is ambiguous in that the light source as recited in both parent claims 1 and 8 is not defined yet as being a *laser* light source. The above-mentioned limitation should read --the light intensity on the measure--.

Claim 10:

- The limitation "the device has at least one laser diode bar" appears to be ambiguous in that it is not related back to the "at least one controllable light source" as recited in the parent claim 8. It is suggested to reword the limitation as

follows --the at least one controllable light source comprises at least one laser diode bar--.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-2, 4, 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Riepenhoff et al. (US 6,341,559) in view of Itoh et al. (US 5,412,408).

Riepenhoff et al. discloses an apparatus and a method for imaging a printing form using at least one controllable light source (array of laser diodes 24) (Fig. 6), the method comprising the steps of generating a plurality of image spots (e.g., laser beam spots 28) at a plurality of positions on the printing form in accordance with image data in a bit field by controlled action of light on the printing form (the laser diode array is activated by the triggering electronic circuit to expose the printing form based on the image data in the form of bit maps) (col. 11, lines 10-42), and controlling an intensity of the light acting at at least one of the positions of the image spots (the light intensity of the laser diode array is controlled by the triggering electronic circuit, which produces a constant current pulses with a duration corresponding to exposure time of the pixel based on the image data) (col. 20, lines 18-33).

However, Riepenhoff et al. fails to teach the intensity of the light acting at at least one of the positions of the image spots being a function of a value of a measure for the plurality of the image spots to be generated in a surrounding area of the position (claim 1), in response to exceedance of a limiting value of the measure, the intensity is increased (claim 2), the surrounding area being either made up of the positions of image spot directly adjacent to the position, or being a raster point, or a partial area of the printing form (claim 4), and the measure being an area coverage of the surrounding area (claim 6).

Itoh et al. discloses an image forming apparatus in which the intensity of the laser light source at the target dots (corresponding to dot signal P1) is a function of the neighboring dots (corresponding to surrounding dot signals P2-P9) within a surrounding area comprising the nine neighboring dots, wherein the laser intensity is increased to the laser beam quantity B greater than the normal laser beam quantity C when all of the nine dots are ON (i.e., 100% of the maximum area density), and wherein the laser intensity is kept to the normal laser beam quantity C when not all of the eight surrounding dots are OFF (i.e., at least 2 of the 9 dots including the target dot are ON or 22% of the maximum area density) and not only one of the eight surrounding dots is OFF (i.e., at most 8 of the 9 dots including the target dot are ON or 88% of the maximum area density).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the device of Riepenhoff et al. by controlling the light intensity of the laser light source for the target dot based on the surrounding area

comprising the eight surrounding dots as taught Itoh et al. The motivation for doing so would have been to produce an image provided with a smooth transition between the adjacent dots.

With regard to claim 7, Riepenhoff et al. in view of Itoh et al. discloses the claimed invention including the limiting value of the surrounding area defined between 22% and 88% of the maximum area density, instead of between 85% and 75% of a maximum value of the measure. It would have been obvious to one having ordinary skill in the art at the time the invention was made to set the limiting value within the claimed range, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

6. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Riepenhoff et al. in view of Itoh et al., as applied to claims 1-2 above, and further in view of Rutherford et al. (US 4,661,861).

Riepenhoff et al., in view of Itoh et al., discloses all the basic limitations of the claimed invention except for the intensity being increased in such a way that a diameter of a generated printing dot is increased by a magnitude proportional to an amplitude of a relative motion between the projection point and the printing form.

Rutherford et al. discloses a laser printing device wherein the intensity of the light beam is increased so as the beam spot size on the photosensitive paper in proportion with the relative movement between the laser beam spot and the photosensitive paper

while maintaining the dither amplitude inversely proportional to the amplitude of the image signal to minimize the bleeding or spreading of the image on the photosensitive paper (see abstract).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the device of Riepenhoff et al. by controlling the intensity of the laser beam and the beam spot diameter with respect to the relative movement between the beam spot and the recording material as taught by Rutherford et al. for the purpose of eliminating bleeding or spreading of the image on the photosensitive material as suggested by Rutherford et al.

7. Claims 1 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Riepenhoff et al. in view of Kobayashi et al. (US 5,270,827).

Riepenhoff et al. discloses all the basic limitations of the claimed invention except for the intensity of the light acting at at least one of the positions of the image spots being a function of a value of a measure for the plurality of the image spots to be generated in a surrounding area of the position (claim 1), and the measure is a number of bits set in the bit field (claim 5).

Kobayashi et al. discloses an image recording device in which the input pixels are recorded by controlling the quantity of light based on the information on the pixels surrounding the target pixel (Figs. 8A-B), the device further including a storage device for storing a set of rules for controlling the light quantity of any given pixel of the input pixels in accordance with the information on the surrounding pixels (see Abstract), the

surrounding pixels forming a matrix of pixels represented by a number of bits set in the bit field (Fig. 9A).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to provide the device of Riepenhoff et al. with the light quantity control for controlling the light quantity of any given pixel of the input pixels in accordance with the information on the surrounding pixels as taught by Kobayashi et al. The motivation for doing so would have been to form a solid image with a high quality.

8. Claims 8-9 and 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohtsuka et al. (US 6,075,614) in view of Kobayashi et al.

Ohtsuka et al. discloses a color printing press including a print unit comprising an imaging device for forming an image on the printing form, the device comprising at least one controllable light source (laser diode arrays 42R, 42G, 42B, Fig. 4), a control unit including a processor (halftone dot simulation processor 20) and a memory unit (lookup tables 80), the processor for determining the corrective quantity of the laser power data corresponding to each of the color image data in the form of a bit map data so as to adjust the gray balance of the output image data.

Ohtsuka et al. fails to teach a program having at least one executable step for execution in the processor, the at least one executable step carrying out a method for imaging a printing form, and the characteristic describing a dependency of the laser power on the measure for the plurality of image spots to be generated in one surrounding area is stored in the memory unit.

Kobayashi et al. discloses an image recording device in which the input pixels are recorded by controlling the quantity of light based on the information on the pixels surrounding the target pixel, the device further including a storage device for storing a set of rules for controlling the light quantity of any given pixel of the input pixels in accordance with the information on the surrounding pixels (see Abstract). Kobayashi et al. further teaches providing control command data or instructions (1010) to be executed for determining the correct exposure pattern signal (111) to control the light quantity of the print head (Fig. 36).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to provide the device of Ohtsuka et al. with the control program to execute the steps of controlling the light quantity based on the information of the surrounding pixels as taught by Kobayashi et al. as well as the storage device for storing the characteristics for controlling the light quantity of any given pixel of the input pixels in accordance with the information on the surrounding pixels as taught by Kobayashi et al. The motivation for doing so would have been to form a solid image with a high quality.

Ohtsuka et al. further teaches the light source comprising at least one laser diode bar having a plurality of individually drivable laser diodes arranged serially (each of the laser diode arrays 42R, 42G, 42B comprises a plurality of laser diodes LDs formed in series on the same substrate and thus constitutes a laser diode bar) (Fig. 4).

Pertinent Prior Art

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Murata (US 5,450,208), Kawata (US 5,946,021), Nakajima et al. (US 6,417,876), Suzuki (US 4,878,068), Goto et al. (US 5,493,324), each discloses an image forming apparatus wherein the light quantity for a target pixel is controlled based on the information of the surrounding pixels.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai C. Pham whose telephone number is (571) 272-2260. The examiner can normally be reached on M-F 8:30AM - 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen D. Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Hai Pham

HAI PHAM
PRIMARY EXAMINER
November 29, 2006